Ecowatt® Drive K120 Series

Quick Setting Manual

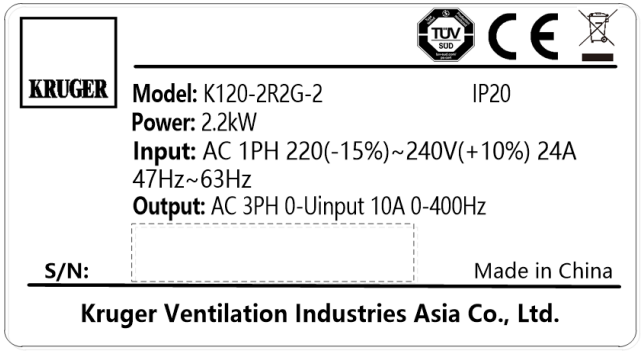
KRUGER

OVERVIEW: This is an instruction of the basic installation and commissioning rules that you must follow to realize quick installation and commissioning.

STEP 1 - UNPACK INSPECTION

Check the following after receiving the product. If found any problems contact the local dealer or Kruger office.

1.1 Whether the packing box is damaged.
1.2 Whether the interior surface of the packing box is abnormal, for example, in wet condition, or whether the enclosure of the VFD is damaged or cracked.
1.3 Whether the accessories inside the packing box are complete (including the manual and keypad).
1.4 Whether the VFD nameplate is consistent with the model identifier on the exterior surface of the packing box and your purchased model.



K120 – 2R2G – 2
① ② ③

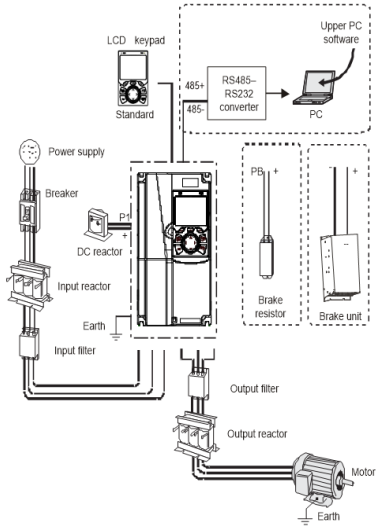
Figure 2-1 Product model

Field	No.	Description	Content
Abbreviation of product series	①	Abbreviation of product series	K: Kruger 1: Single phase 20: ingress protection (IP) rating, IP20
Rated power	②	Power range + Load type	2R2–2.2kW G: Constant torque load
Voltage class	③	Voltage class	2: AC 1PH 220V(-15%)–240V(+10%)

STEP 2 - INSTALLATION CONFIRMATION

Check the following before VFD installation.

2.1 Ensure that the grid voltage meets input power of VFD.
2.2 Ensure that the output power from VFD is matched with the motor spec.
2.3 Ensure that the environments of installation area are not over VFD spec.



Check the following after VFD installation.

2.4 Ensure that the correct accessories are selected for the VFD, the accessories are correctly and properly installed, and the installation cables meet the requirements of all components (including the reactor, input filter, output reactor, output filter, DC reactor, braking unit and braking resistor).
2.5 Ensure that all control cables and power cables are run separately and the routing complies with EMC requirement.
2.6 Ensure that all grounding systems are properly grounded according to the requirements of the VFD.
2.7 Ensure that the external connection terminals of the VFD are tightly fastened and the torque is appropriate.
2.8 Ensure that there are screws, cables, or other conductive items left in the VFD. If yes, get them out.

STEP 3 - BASIC COMMISSIONING

Complete the basic commissioning below before the actual use of the VFD. **(See more details in page no. 2)**

3.1 MOTOR SETTING & AUTO TURNING

3.2 CONTROL METHOD & SETTING

CAUTION: The K354 should ONLY be installed by a qualified electrician.

DANGER! Improper wiring can and will cause bodily harm as well as damage to the equipment.

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3. BASIC COMMISSIONING (CONTINUE)

You can perform various operations on the VFD by using the keypad, including entering/exiting menus, parameter selection, list modification and parameter addition.

3.1 MOTOR SETTING & AUTO TURNING

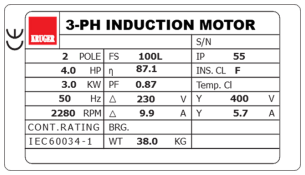
1. Select the motor type

Push PRG/ESC => P02.00 motor type
(0: Asynchronous motor, 1: Synchronous motor)

2. Set motor parameters follow Motor's nameplate

- Asynchronous motor_P02.01 to P02.05

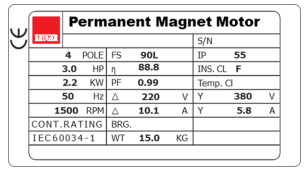
Example of setting



PP02.01: Rated Power (3.0 kW)
P02.02: Rated Frequency (50 Hz)
P02.03: Rated Speed (2880 rpm)
P02.04: Rated Voltage (230 V)
P02.05: Rated Current (9.9 A)

- Synchronous motor _P02.15 to P02.19

Example of setting



P02.15:Rated Power (2.2 kW)
P02.16:Rated Frequency (50 Hz)
P02.17:Number of pole pair (2)*
P02.18:Rated Voltage (220 V)
P02.19:Rated Current (10.1 A)
* 2 pole = 1 pole pair

3. Auto turning

De-couple the load from motor before start autotuning.
Push PCG/ESC => P00.15 Motor parameter Auto tuning
P00.15 = 1: Rotary auto turning => Push RUN to start autotuning => Waiting until turning completed
Note: If cannot be de-coupled motor from the load, please select to perform 2: Static autotuning.

4. Check rotating direction

Push Quick/JOG for 5sec to run motor and check whether the motor rotational direction is correct. If not, change the rotation direction by swapping U↔W wires of the motor. or change P00.13 from 0 to 1: Run in reverse direction.

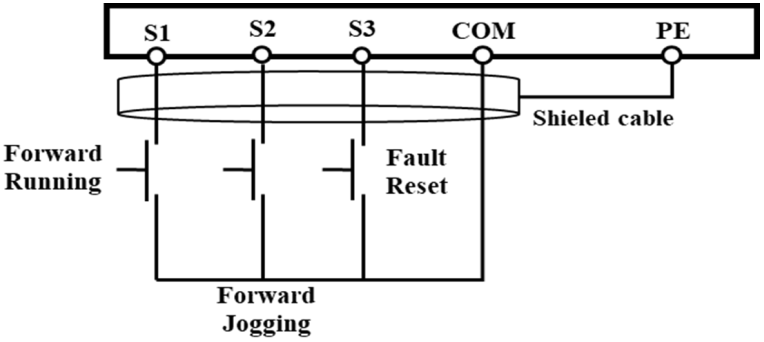
3.2 CONTROL METHOD SETTING

1. Select Start/Stop command method

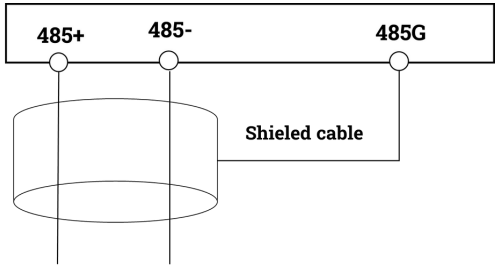
Push PRG/ESC => P00.02: Run cmd channel
(0: Keypad, 1: Terminal, 2: Communication)

P00.01 = 0 : Start/Stop via Keypad
- You can Push RUN or STOP on Keypad directly.

P00.01 = 1 : Start/Stop via Terminal
- Connect 3 switch to terminal S1,S2,S3, COM, PE below.



P00.01 = 2 : Start/Stop via Communication (Modbus)
- Connect control cable to 485+, 485-, 485G below.



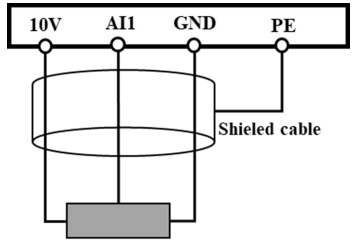
RS485 connect to Controller

2. Select Speed command method

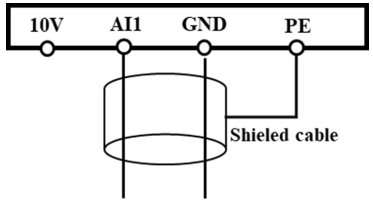
Push PRG/ESC => P00.06: A Freq cmd
(0: Set via Keypad, 1: Set via AI1)

P00.06 = 0 : Set via Keypad
- You can adjust motor speed / frequency from the Digital Operator on Keypad directly.

P00.06 = 1 : Set via AI1
- Speed reference from external terminals (Potentiometer or Analog Signal)
Connect cable to 10V, AI1, GND, PE below.



Potentiometer 2K Ohm



Analog signal 0 - 10V